

FILONENKO, N.G., inzh.

Using semiconductors for measuring the temperature of the surface  
of cylinder dryers. Trudy LTITSBP no.8:162-168 '61. (MIRA 16:9)  
(Woodpulp—Drying)

<sup>1</sup>  
FILONENKO, N.G., inzh.

Control of woodpulp bleaching by the oxidation-reduction potential.  
Trudy LTITSBP no.10:75-79 '62. (MIRA 16:8)

(Woodpulp) (Bleaching)  
(Oxidation-reduction reaction)

LAVILOV, A.G., inzh.; FILONENKO, N.V., inzh.

Conducting baring operations with use of multi-bucket excavators  
in winter conditions. Ugol' Ukr. 3 no.11:24-25 N '59.

(MIRA 13:3)

(Donets Basin--Strip mining)

(Excavating machinery--Cold weather operations)

19

CA

PROCESSES AND PROPERTIES INDEX

Effect of mineralizers on the formation of sintered corundum. D. S. Belyankin and N. I. Filonenko. *Compt. rend. acad. sci. U. R. S. S.* 2, 146 (in German 130-4) (1933). Crucibles of pure  $Al_2O_3$  with slight addns. of either  $AlCl_3$ , cryolite,  $B(OH)_3$ , and  $FeCl_3$  were prepd. by firing to temps. up to  $1800^\circ$ . Sp. gr., porosity and crystn. were observed.  $AlCl_3$  had little effect.  $B(OH)_3$  gradually lost its effect at high temp. In the presence of 2% of  $FeCl_3$  or of cryolite a product of porosity less than 0.13% was obtained at only  $1600-1700^\circ$ . After firing to these temps. the content of  $Fe_2O_3$  was less than 0.10%, and that of  $Na_2O$  less than 0.30%. D. S. R.

ASA-ILA METALLURGICAL LITERATURE CLASSIFICATION

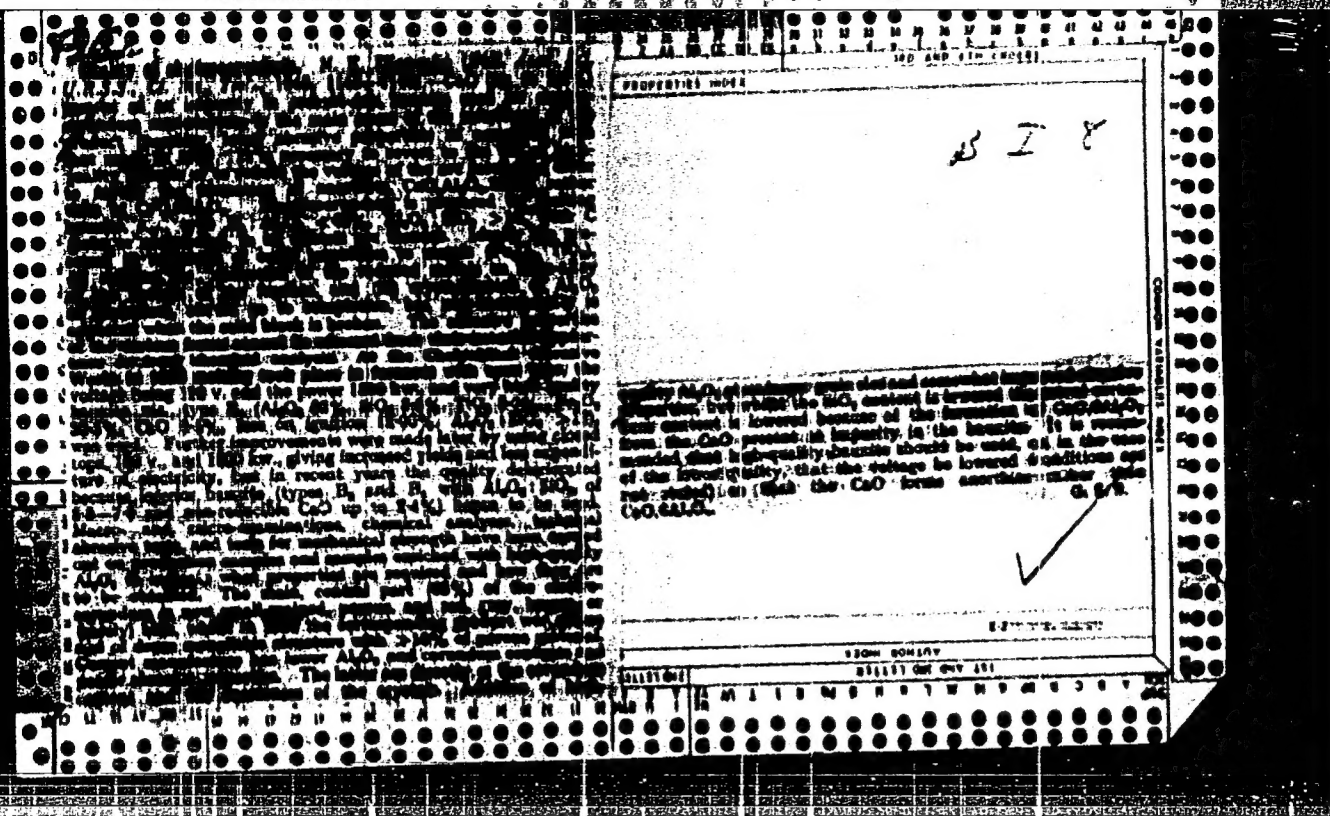
FILONENKO, N. Ye.

State-Union-Central Scientific Research Laboratory of Abrasives and Polishing  
(TsNIlash). (-1944-).

"Concerning Question of Nature of Electro-Corundum." Nos. 10-11, 1945.  
Iz. Ak. Nauk. SSSR. Otdel. Tekh. Nauk.

BR-52059019.

LIST AND IMP. ORDER		PROCESS AND PROPERTIES INDEX		LIST AND IMP. ORDER	
<p><i>Application of the petrographic method of analysis in the electric-furnace melting of corundum. N. K. Filonenko. Zashchita Lab. 11, 1138-9(1945); (1. C. 40, 4081).</i></p> <p>Decreasing the voltage of the furnace smelting bauxites contg. up to 2% of CaO within the range 100-130 v, (1) facilitates the formation of a dense corundum block, (2) improves the quality of the alumina melt (the content of alumina increases from 90 to 94%), and (3) facilitates the growth of corundum crystals (the size increases from 0.2 to 0.8 mm.). The CaO in the bauxite reacts with alumina during the melting process to form <math>\text{CaO} \cdot 0.8\text{Al}_2\text{O}_3</math>.</p> <p>W. R. Hepp</p>					
ASB. 5.1A METALLURGICAL LITERATURE CLASSIFICATION					
SOURCES		SOURCES		SOURCES	
SOURCES		SOURCES		SOURCES	



COMMON ELEMENTS		PROCESSES AND PROPERTIES INDEX		COMMON ELEMENTS	
		<p><b>High-alumina minerals in a block of electrocorundum.</b>  N. B. Filonenko (Central Sci. Research Lab., for Abrasives and Grinding Materials, Leningrad). <i>Compt. rend. acad. sci. U.R.S.S.</i> 48, 430 J(1945).--At the Chelyabinsk electrotechnical works, low-grade bauxite was used to form corundum. The corundum was found to be of low-grade as an abrasive. This is attributed to the formation of a phase <math>\text{CaO} \cdot 6\text{Al}_2\text{O}_3</math>. A chem. analysis, and optical data are given. This compl. has 30-40% less abrasive capacity than corundum. The product is improved by adding <math>\text{SiO}_2</math> to combine with the lime in the bauxite so as to cause the formation of unorthite. Data relating color to compn. are given. The ws are variable and are related to the <math>\text{TiO}_2</math> content. George T. Faust</p>			
MATERIALS INDEX		ASAC-SLA METALLURGICAL LITERATURE CLASSIFICATION		MATERIALS INDEX	
SUBJECT INDEX		AUTHOR INDEX		SUBJECT INDEX	

FILONENKO, N. Ye.

"Interaction of the Binding with Corundum in Thermal Processing of a Ceramic Body," Dokl. AN. Vol. 58, No. 8, 1947.

Central & Sci. Res. Lab., Abrasives and Grinders,

1ST AND 2ND DEPT													3RD AND 4TH DEPT												
PROCESSING AND PROPERTIES INDEX																									
COMMON ELEMENTS													COMMON VARIABLE MOLE												
CA													18												
<p><b>Influence of reactivity and structure of the binder on the mechanical properties of ceramic bodies containing corundum.</b> N. B. Filonenko, <i>Doklady Akad. Nauk S.S.S.R.</i> 61, 873-4 (1944). Opinions regarding the interaction of the binder and corundum in the body have</p>													<p>changed. The essential role of unresorbed corundum in producing desirable mech. properties of the body is being recognized more and more. Data on the latter phenomena are given by Filonenko in expts. on the reactions of electrocorundum (grain size No. 40) with different glassy or totally cryst. binders, fired to 1300° for 20 hrs. After firing the bodies were analyzed and examd. microscopically. The results showed improvement in mech. properties (tensile, compressive, and bending strength) only when the enrichment in <math>Al_2O_3</math> took place in the molten state, and when a glass was produced which was not inclined to cryst. This glass was of high viscosity, and the adhesion on the surface of the electrocorundum grains was increased without disturbance of the glass structure of the binder. The crystal. reaction products seen in the glass were spinel, cordierite, nephelite, and anorthite. W. Eitel</p>												
<p><i>A-U Sci Res Inst Abrasives &amp; Polishing</i></p>																									
ASH-S-LA METALLURGICAL LITERATURE CLASSIFICATION																									
<p>1ST DEPT</p>													<p>2ND DEPT</p>												
<p>3RD DEPT</p>													<p>4TH DEPT</p>												

FILONENKO, N. YE.

PA 27/49T13

USSR/Chemistry - Systems

Feb 49

Chemistry - Lime, Aluminates of

"Hexa-Aluminate of Lime in the System  $\text{CaO} - \text{Al}_2\text{O}_3$ ,"  
N. Ye. Filonenko, All-Union Sci Res Inst Abrasives  
and Grinders, Leningrad, 4 pp

"Dok Ak Nauk SSSR" Vol LXIV, No 4

Experimentally establishes the region of stability  
for hexa-aluminate of lime in the dual system  $\text{CaO} -$   
 $\text{Al}_2\text{O}_3$ , thus supplementing high-aluminous part of the  
system and making it more accurate. Submitted  
9 Dec 48.

27/49T13

COMMON ELEMENTS		PROCESSES AND PROPERTIES INDEX	
<p><b>Investigation of the equilibrium conditions in the alumina corner of <math>\text{CaO-Al}_2\text{O}_3\text{-SiO}_2</math>.</b> N. E. FILONENKO AND I. V. LAVROV. <i>J. Applied Chem. (U.S.S.R.)</i>, 23 (10) 1040-46 (1950).—To avoid difficulties of static method and of preparing optically uniform material, a combination method was used which consisted in holding the compositions for prolonged periods at a given temperature and quenching. In addition, the melting points of cones of given compositions were determined. (1) Diagram of <math>\text{CaO-Al}_2\text{O}_3</math>. Corundum, <math>\text{CaO} \cdot 6\text{Al}_2\text{O}_3</math>, and <math>\text{CaO} \cdot 2\text{Al}_2\text{O}_3</math> are stable crystalline phases in the high-alumina section of this system. Corundum crystallizes in the trigonal system and separates from the melt in the form of isometric crystals which are a combination of the rhombohedron and basal pinacoid. <math>\text{CaO} \cdot 6\text{Al}_2\text{O}_3</math> crystallizes in the hexagonal system and separates from the melt in the form of hexagonal plates which are a combination of basal pinacoid and bipyramid (and rarely prism); <math>n_\omega = 1.759</math> and <math>n_e = 1.752</math>. <math>\text{CaO} \cdot 6\text{Al}_2\text{O}_3</math> melts incongruently at <math>1850^\circ \pm 10^\circ\text{C}</math>, decomposing into corundum and a liquid for all compositions containing over 80% <math>\text{Al}_2\text{O}_3</math>. A mixture of the composition <math>\text{CaO} \cdot 6\text{Al}_2\text{O}_3</math> fuses only upon reaching <math>1910^\circ</math>. <math>\text{CaO} \cdot 2\text{Al}_2\text{O}_3</math> crystallizes, apparently, in the tetragonal system and separates from the melt in the form of grains and plates with <math>n_\omega = 1.617</math> and <math>n_e = 1.652</math>. <math>\text{CaO} \cdot 2\text{Al}_2\text{O}_3</math> melts, without decomposition, at <math>1750^\circ \pm 10^\circ</math>. Between <math>\text{CaO} \cdot 2\text{Al}_2\text{O}_3</math> and <math>\text{CaO} \cdot 6\text{Al}_2\text{O}_3</math> there exists a eutectic with a melting point of <math>1730^\circ \pm 10^\circ</math> and a chemical composition of <math>80.5 \pm 1.0\%</math> <math>\text{Al}_2\text{O}_3</math> and <math>19.5 \pm 1.0\%</math> <math>\text{CaO}</math>. (2) System <math>\text{CaO-Al}_2\text{O}_3\text{-SiO}_2</math>. The corundum field in this system borders with the fields of <math>\text{CaO} \cdot 6\text{Al}_2\text{O}_3</math>, anorthite, and mullite. The reaction <math>\text{CaO} \cdot 6\text{Al}_2\text{O}_3 \rightleftharpoons \text{corundum} + \text{liquid}</math> proceeds within the interval <math>1500^\circ</math> to <math>1850^\circ\text{C}</math> for compositions situated along the bordering curve between the fields of corundum and <math>\text{CaO} \cdot 6\text{Al}_2\text{O}_3</math>. The field of <math>\text{CaO} \cdot 6\text{Al}_2\text{O}_3</math> borders with the fields of stability of corundum, anorthite, gehlenite, and <math>\text{CaO} \cdot 2\text{Al}_2\text{O}_3</math>. The bordering curves between the fields of corundum, <math>\text{CaO} \cdot 6\text{Al}_2\text{O}_3</math>, and anorthite converge in a five-point locus having a melting point of <math>1495^\circ \pm 5^\circ</math> and a composition of <math>41.0 \pm 0.5\%</math> <math>\text{Al}_2\text{O}_3</math>, <math>34.0 \pm 0.5\%</math> <math>\text{SiO}_2</math>, and <math>23.0 \pm 0.5\%</math> <math>\text{CaO}</math>. B.Z.K.</p>		<p>13</p>	
<p>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>			
<p>REGION 171213100</p>			
<p>REGION 171213100</p>			

PILONENKO, N. E. ✓

Calcium hexaluminate in the system  $\text{CaO-Al}_2\text{O}_3\text{-SiO}_2$ . N. E. PILONENKO AND I. V. LAVROV, *Doklady Akad. Nauk S.S.S.R.*, 66 [4] 673-70 (1949).—Microscopic study of rapidly chilled samples of the high-alumina part of the system  $\text{CaO-Al}_2\text{O}_3\text{-SiO}_2$  reveals the existence of corundum,  $\text{CaO} \cdot 6\text{Al}_2\text{O}_3$ , and  $\text{CaO} \cdot 2\text{Al}_2\text{O}_3$ . The  $\text{CaO} \cdot 6\text{Al}_2\text{O}_3$  crystallizes in the hexagonal system and separates from the melt in hexagonal plates which comprise a combination of basal pinacoid forms with a bipyramid and rarely with a prism;  $n_w = 1.759$  and  $n_z = 1.752$ . The point at which the corundum,  $\text{CaO} \cdot 6\text{Al}_2\text{O}_3$ , and anorthite exist in equilibrium with the liquid and vapor has the composition  $\text{Al}_2\text{O}_3$  41.0  $\pm$  0.5%,  $\text{SiO}_2$  30.0  $\pm$  0.5%, and  $\text{CaO}$  23.0  $\pm$  0.5%; the melting point is  $1405 \pm 5^\circ$ . The field of  $\text{CaO} \cdot 6\text{Al}_2\text{O}_3$  borders on the fields of stability of corundum, anorthite, gehlenite, and  $\text{CaO} \cdot 2\text{Al}_2\text{O}_3$ . The  $\text{CaO} \cdot 6\text{Al}_2\text{O}_3$  melts with decomposition into corundum and liquid. The reaction  $\text{CaO} \cdot 6\text{Al}_2\text{O}_3 \rightleftharpoons \text{corundum} + \text{melt}$  takes place at a definite concentration within the interval  $1500^\circ$  to  $1850^\circ\text{C}$ . R.Z.K.

3 (3)51

FILONENKO, N. Ye

USSR/Engineering - Refractories, Structure Mar 52

"Examination of Electric Corundum in Reflected Light," N. Ye. Filonenko, Dr Tech Sci, L. A. Borovkova, Sci Res Inst of Abrasives and Grinding

"Ogneupory" No 3, pp 124-133

Microscopic study permitted establishing: mineralogical compn of corundum and characteristic appearance of opaque minerals and alloys, such as titanium sesquioxide, titaniferous mineral crystg in rhombic system, titanium nitride and ferroalloys with various content of metallic titanium; microhardness of corundum components; 204/25

USSR/Engineering - Refractories, Structure Mar 52  
(Contd)

transformation of gray titaniferous mineral at 5000 accompanied by considerable vol expansion which causes formation of crack network on surface of corundum refractories. Presents several photographs.

204/25

PA 244T73

USSR/Engineering - Refractories, Corundum Oct 52

"Concerning the Anomalous Expansion of Electrical Corundum," N. Ye. Filonenko, Dr Tech Sci, O. B. Kuznetsova, All-Union Sci Res Inst of Abrasives and Grinding

"Ogneupory" No 10, pp 470-474

Studies process of oxidation of titanium containing minerals and alloys within composition of electrical corundum. Establishes that oxidation at 400-600° C of Ti-containing ferroalloys is main

244T73

cause for anomalous expansion of corundum. Oxidation process was studied by microscopic examination of polished specimens in reflected light. Mineralogical composition of corundum specimens is tabulated.

FILONENKO, N. Ye.

244T73

ФИЛОНЕНКО, Н. Я.

USSR/Chemistry - Titanium Compounds  
Abrasives

21 Sep 52

"Oxides of Titanium in the Interval  $TiO_2$  -  $Ti_2O_3$ ,"  
N. Ye. Filonenko, V. I. Kudryavtsev and I. V. Lavrov,  
All-Union Sci Res Inst of Abrasives and Polishing

DAN SSSR, Vol 86, No 3, pp 561-564

The existence of two cryst phases having the compn  
 $Ti_2O_3 \cdot TiO_2 (Ti_3O_5)$  and  $Ti_2O_3 \cdot 3 \cdot 4TiO_2$  in the interval  
 $TiO_2$  -  $Ti_2O_3$  was clarified. Increasing the amt of  
 $Ti_3$  in the latter of the two phases changes the  
color in reflected light from light gray to bluish  
247T10

gray. The optical properties of this new modifica-  
tion of titanium dioxide are significantly different  
from those of the known form. Presented by Acad  
D. S. Belyankin 20 Jul 52

PA 247T10

247T10

FILONENKO, N. Ye.

FILONENKO, N. Ye., and BOROVKOVA, L. A.

"Investigation of the Phase Composition of Recovered Materials in the  
Production Of Calcium Carbide," Abraziv, No 9, 3-8, 1953

To carry out an investigation, the authors work out a method of  
preparing polishing mud from recovered materials and a procedure for  
mineralogical analysis on preliminarily synthesized specimens of calcium  
carbide. They establish the nature of the admixtures in calcium carbide.

RZhGeol, No 1, 1955

FILOMENKO. N.E.

Titanium semisulfide in electrofused corundum. N. E.

FILOMENKO AND V. I. KUPCHAYEV. Doklady Akad. Nauk

S.S.S.R., 88 (5) 891-93 (1953).--Flakes on a specimen of ferro-

alloy obtained in the production of electrofused corundum proved

to be  $Ti_2S$ . Its density was 4.61. It was insoluble in dilute and

concentrated  $HCl$  and  $H_2SO_4$ . Concentrated  $HNO_3$  did not af-

fect the  $Ti_2S$  in the cold; boiling  $HNO_3$  formed a film of  $TiO_2$ .

The microhardness of the  $Ti_2S$  was 620 kg./mm.<sup>2</sup>. In an open

muffle furnace, oxidation of  $Ti_2S$  starts at 700°C. and is practically

complete at 900°. White electrofused corundum containing 1%

$Ti_2S$  showed an anomalous expansion at 775° to 900° which was

due to oxidation of the  $Ti_2S$ .

B.Z.K.

Filonenko, N. Ye

USSR / Morphology of Crystals. Crystallization.

E-7

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9385

Author : Filonenko, N. Ye., Alferov, V. A.

Title : Influence of Impurities on the Crystallization of Silicon Carbide.

Orig Pub : Abrazeviy, 1955, No 13, 3-20

Abstract : An investigation was made of the influence of impurities of  $\text{Fe}_2\text{O}_3$  and Ca. The initial materials were quartz sand and petroleum coke. Heat treatment was carried at  $1650 - 2200^\circ$  with soaking for 5 -- 6 hours. The specimens obtained were subjected to microscopic and chemical analysis. The following was established: (1) Impurities in the charge have favorable or adverse effects essentially not at high temperatures ( $> 2000^\circ$ ) at the end of the process of the carbide formation, and at temperatures below  $1800^\circ$  their effect is felt at the beginning of the process. (2) Impurities that do not form compounds with silica (for example iron) are not harm-

Card : 1/2

*NE*

✓ The melting of mullite. N. E. Rilonenko and I. V. Lavrov. *Doklady Akad. Nauk SSSR*, 89, 141-2 (1953).  
An analysis of 0.2 g. globules consisting of glass and mullite prisms gave  $\text{SiO}_2$  29.62-31.83,  $\text{Al}_2\text{O}_3$  62.25-65.66, and  $\text{Na}_2\text{O}$  4.69-5.98%. The compn. was changed little or none by heating at 1830° for 30 min., but a microscopic study disclosed the formation of grains of corundum at 1820° and a considerable increase of crystals at 1830°. Hence, mullite disintegrated into corundum and a melt enriched with  $\text{SiO}_2$ . Two photomicrographs illustrate the melting of mullite.

E. Markus

①

USSR / Morphology of Crystals. Crystallization.

E-7

Ans Jour : Ref Zhur. - Fizika, No 4, 1957, No 9385

Abstract : ful and may serve as catalysts. (3) Impurities that interact with  $\text{SiO}_2$  upon production of  $\text{SiC}(\text{CaO})$  effect adversely the formation of  $\text{SiC}$ , the most harmful impurities being  $\text{Al}_2\text{O}_3$  and  $\text{CaO}$ ; if they are jointly present, there is formed in the  $\text{SiO}_2$  a eutectic with a melting temperature of  $1170^\circ$ . (4)  $\text{Al}_2\text{O}_3$  amounting to 3% prevents carbide formation; a eutectic is formed with a melting temperature of  $1595^\circ$ ; at a temperature above  $1750^\circ$  there is formed  $\text{Al}_4\text{S}_3$  and  $\text{SiC}$  of the third modification (more valuable for electro-technical purposes than for abrasives). (5) The presence of free  $\text{CaO}$  in the charge reduces the yield of  $\text{SiC}$  (at 1.5%  $\text{CaO}$  in the charge, the silicon content is reduced by 17%, and at 3%  $\text{CaO}$  it is reduced by 45%).

Card : 2/2

USSR/Chemical Technology

FILONENKO, N. YE.

Chemical Products and Their Application. Silicates.  
Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 62341

Author: Filonenko, N. Ye.

Institution: None

Title: On the Problem of Microscopic Analysis of Abrasive Grain of Standard Synthetic Corundum in Reflected Light

Original

Periodical: Abrazivy, 1956, No 15, 35-38

Abstract: For technological control of the quality of produced electro-corundum and determination of the quality of abrasive grain of electro-corundum it is recommended to put in practice at plant laboratories a microscopic analysis in reflected light. The following classification is proposed for abrasive grain according to its structure: monocrystals, dense aggregate and aggregates. The monocrystals include corundum crystals and their fragments and also individual corundum crystals with enclosed therein inclusions of

Card 1/2

'USSR/Chemical Technology - Chemical Products and Their Application. Silicates.  
Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 62341

Abstract: glass and other phases; dense aggregates include grains consisting of several corundum crystals closely adjoining each other or containing apparent thin interlayers of glass or other phases; aggregates include grains consisting of several corundum crystals held together by glass interlayers containing inclusions of other minerals.

Card 2/2

Filonenko, N. Ye.

20-3-45/59

AUTHORS: Filonenko, N.Ye., Lavrov, I. V., Andreyeva, S. V., Pevzner, R. L.

TITLE: Note on Alumina Spinel  $AlO \cdot Al_2O_3$  (O glinozemistoy shpineli  $AlO \cdot Al_2O_3$ ).

PERIODICAL: Doklady Akademii Nauk, 1957, Vol. 115, Nr 3, pp. 583-585 (USSR).

ABSTRACT: On the occasion of the microscopic investigation of the reduction products of the components of a layer with a high content of alumina the authors found a corundum resorption with the formation of a vitreous isotrope phase, if the reduction was effected by solid carbon (for the production of electro-corundum) (Light diffraction in some granules 1,77-1,80). This phase displays a lattice, the parameter of which is close to that of alumina, but differs from it by its higher diffraction (higher than corundum). This phase is produced as a result from the solution of corundum and is consistent at 1900°C. These facts justify the assumption, that the interaction of corundum with carbon follows the reaction.  $3 Al_2O_3 + C = 2 Al_3O_4 + CO$ . For control purposes

a synthesis was accomplished. Samples synthetisized at 1500°C were black, at 1600°C and above they were white and contained no corundum, but consisted almost entirely of the isotrope phase. At 1600°C it is

Card 1/3

Note on Alumina Spinel  $AlO \cdot Al_2O_3$ .

20-3-45/59

formed by isometrical granules about  $2-4 \mu$  in size. In addition to that, it contains aggregates of microlithes with a high light diffraction and double refraction. At  $1700^\circ C$  there appeared, besides isometrical granules of the isotrope phase, recrystallized parts,  $6-10 \mu$  in size, of the phase with irregular form with numerous gas inclusions. At  $1750^\circ C$  this layer is sintered into a uniform mass with many gas bubbles. No crystals are visible. At  $1800^\circ C$  the structure changes instantaneously. The sample consists of isometrical crystals of the isotrope phase  $60-100 \mu$  in size. In between a small amount of very fine foils of an unknown phase were found. The chemical analysis brought out for samples produced at  $1600^\circ C$ :  $-AlO-1,26Al_2O_3$ , at  $1700^\circ C$ :

$AlO \cdot 1.21 \cdot Al_2O_3$  and at  $1750^\circ C$ :  $-Al \cdot 1.06 Al_2O_3$ . X-ray analysis showed the composition to consist of a single phase (sample at  $1600^\circ C$ ), its lattice parameter  $a = 7,92 \text{ \AA}$ . The spectral analysis showed very clearly, that aluminium is represented only by the brightest lines  $Al \ 3082,16$  and the doublet  $Al \ 3092,7$ ,  $Al \ 3092,8$  in the  $\gamma$  - spectra of alumina and corundum. These lines are much more intensive in the spinel spectrum than in the case of alumina and corundum, and there occur 6 other lines, which are characteristic for reduced aluminium. All these facts can be explained, apparently, by a weaker combination between  $Al$  and  $O$  in the

Card 2/3

Note on Alumina Spinel  $AlO.Al_2O_3$ .

20-3-45/59.

spinel than in the  $\gamma$  - alumina and in the corundum. Hence, a spinel of the given composition was synthesized by the interaction of alumina with solid carbon in the range from 1600-1800°C, displaying a very high melting point (1980-1990°C), a high microhardness ( $H = 2070 \text{ kg/mm}^2$ ) and good chemical resistivity. There are 4 figures (in one table).

ASSOCIATION: All-Union Scientific Research Institute for Abrasives and Grinding (Vsesoyuznyy nauchno-issledovatel'skiy institut abrazivov i shlifovaniya).

PRESENTED: By D. S. Korzhinskiy, Academician, March 12, 1957.

SUBMITTED: March, 12, 1957.

AVAILABLE: Library of Congress.

Card 3/3

FILONENKO, NINA YEVGEN'YEVNA  
PHASE I BOOK EXPLOITATION

600

Filonenko, Nina Yevgen'yevna and Lavrov, Igor' Veniamincvich

Petrografiya iskusstvennykh abrazivov (Petrography of Synthetic Abrasives) Moscow, Mashgiz, 1958, 90 p. 2,000 copies printed.

Reviewer: Karlin, V.V., Candidate of Technical Sciences; Ed.: Nikogosyan, Kh. S., Candidate of Technical Sciences; Ed. of Publishing House: Borodulina, I.A.; Tech. Ed.: Sokolova, L.V.; Managing Ed. for literature on machine-building technology (Mashgiz, Leningrad Division): Naumov, Ye. P., Engineer.

PURPOSE: This book is intended for engineers, technicians, and scientific personnel whose work is concerned with the production of abrasives, refractories, electrical equipment, and cutting tools.

COVERAGE: The book deals with the phase composition and structure of abrasive materials and cutting tools and with the physical and chemical basis of their production. The materials described are:  
Card 1/5

600

# Petrography of Synthetic Abrasives

common and white electrocorundum, monocorundum, silicon carbide, and boron carbide. The authors have attempted to gather together into one small volume information which hitherto has been available only in scattered magazine articles. There are 77 references, of which 57 are Soviet, 10 English, 9 German, and 1 French. No personalities are mentioned.

## TABLE OF CONTENTS:

Preface	3
Ch. I. General Information on Abrasives	5
1. Natural and synthetic abrasive materials	5
2. The abrasive tool and its characteristics	6
3. The role of microscopic investigations in the production of abrasives	8
Ch. II. Common Electrocorundum	9
4. Physical and chemical basis of the production process	9
5. Structure of a block of common electrocorundum	13
6. Mineralogical and chemical composition of electrocorundum in various parts of the block	13
7. Characteristics and certain properties of minerals composing common electrocorundum	17

Card 2/5

Petrography of Synthetic Abrasives

600

8. The grain of common electrocorundum and changes in it during the calcining process	27
Ch. III. White Electrocorundum	30
9. Methods of preparing white electrocorundum	30
10. Structure and mineralogical composition of a block of white electrocorundum	31
11. Petrographic characteristics of the product as produced by the continuous-casting method	35
12. Minerals of which white electrocorundum is composed	37
Ch. IV. Monocorundum [Electrocorundum Made from Bauxite by the Oxysulfide Method]	39
13. Basic steps and theoretical principles of the production process	39
14. Characteristic features and properties of phases encountered in the grain of monocorundum	42

Card 3/5

Petrography of Synthetic Abrasives

600

15. Distinguishing features of impurities in monocorundum in reflected light	46
Ch. V. Silicon Carbide (Carborundum)	48
16. Green and black silicon carbide. Synthesis. Products of synthesis	48
17. Phase composition of the products of synthesis	52
18. Minerals making up the substance	55
19. Effect of impurities on the formation and crystallization of SiC	58
Ch. VI. Boron Carbide	62
20. General information on production and application	62
21. Boron carbide and its distinguishing features in direct and reflected light	63
Ch. VII. Mineral Formation in the Process of Firing Abrasive Tools	65
22. Structure of the body of the abrasive tool	65
23. Physical and chemical processes taking place during the firing of abrasive tools with a ceramic binder	67
24. Mineral composition of ceramic binders	71
Card 4/5	

Petrography of Synthetic Abrasives

600

Ch. VIII. Microscopic Analysis of Abrasives

77

25. Analysis of sections of abrasive materials

77

26. Analysis of mineralogical composition of grains of  
electrocorundum

80

27. Microscopic analysis of abrasive powders

84

28. Microscopic analysis of the body of abrasive tools

84

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87

AVAILABLE: Library of Congress

GO/lsb

29 August 1958

Card 5/5

*PILONENKO, N. Ye.*

SOV/1-50-15-54089

Translation from: Referativnyy zhurnal. Khimiya, 1959, No 15, p 347 (USSR)

AUTHOR: Pilonenko, N. Ye.

TITLE: Titanium Compounds in Electrocorundum

REFERENCE: Tr. 5-go Soveshchaniya po eksperim. i te'ori. mineralogii i petrogr., 1956, Moscow. AN USSR. 1:50, pp 352 - 361

ABSTRACT: Results are cited of an investigation which permitted to detect several new titanium compounds in electrocorundum and to determine the conditions of their formation in the process of smelting and cooling of the alumina melt. The first titanium minerals appearing in the process of electrocorundum preparation are titanium carbide and nitride, the formation of which takes place during the heating and sintering of the charge on the furnace charge hole. Titanium carbide is formed as a result of the reaction in the solid phase between titanium dioxide and particles of carbon material of the charge. Titanium nitride is formed as a result of the reaction between titanium dioxide and air nitrogen. Both reactions proceed at an appreciable rate at a temperature above 1,500°C. The presence of titanium carbide and nitride is noted in the upper parts

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Titanium Compounds in Electrocorundum

NOV/1-59-15-5700

of the block, its top and undertop. In the darkly colored, blue and brown varieties of the undertop, at the joints with corundum crystals,  $Ti_2O_3$  crystals were detected formed as a result of the oxidation of titanium sesquioxide. In the basic central and in parts of the block which are well fused, duly reduced and slowly crystallized titanium is present in the form of sesquioxide. It is noted that titanium sesquioxide is its most stable compound; it is retained in the melt and crystallizes out of it at a temperature of  $\sim 1400^\circ C$ . In the fine-crystalline side parts of the block a black, titaniferous mineral has been detected which is similar in composition to the residual melt and which corresponds to the formula  $Ti_{1.75}$  or  $Ti_{1.7}$ . The results of the investigation warranted to regard this mineral as a variety of the anosovite mineral of high-titanium slags. On the basis of the obtained data, P.V. Golubkov has proposed a rational melting procedure for the electrocorundum block which reduces several times the abnormal thermal extension of the electrocorundum and decreases correspondingly the amount of rejected abrasive products which are caused by this phenomenon.

G. Maslennikova

✓

Card 2/2

5(1,2)

AUTHORS: Filonenko, N. Ye., Lavrov, I. V., SOV/20-124-1-44/69  
Andreyeva, S. V.

TITLE: On the Aluminum Oxycarbides (Ob oksikarbidakh alyuminiya)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 1, pp 155-158  
(USSR)

ABSTRACT: The solid production by synthesis of the substances mentioned in the title by an immediate interaction of alumina with carbon is of interest for the industry using corundum material (refractory or grinding material). The authors carried out the synthesis in order to investigate those problems and also to determine the optical properties of the Al-oxycarbides. Batches were produced basing upon the process of the following reactions:

- (1)  $3\text{Al}_2\text{O}_3 + \text{C} \rightarrow 2\text{Al}_3\text{O}_4 + \text{CO}$  (C-content 4%);
- (2)  $2\text{Al}_2\text{O}_3 + 3\text{C} \rightarrow \text{Al}_4\text{O}_4\text{C} + 2\text{CO}$  (C-content 15%);
- (3)  $\text{Al}_2\text{O}_3 + 3\text{C} \rightarrow \text{Al}_2\text{OC} + 2\text{CO}$  (C-content 26%) .

Card 1/3

The components were: highly disperse (2 - 0,1  $\mu$ )  $\gamma$ -alumina and mineral oil coke (grains 50-0  $\mu$ ).

On the Aluminum Oxycarbides

SOV/20-124-1-44/69

The briquets produced from them were subjected to a heat treatment in the "Tamman" furnace at 1500-1900° for up to 3.5 hours. The loss of weight suffered during the reaction was recorded (Fig 1). A microscopic analysis according to the immersion method was then carried out in polished sections (Figs 2,3) and a chemical analysis in some cases. Properties of the determined aluminum tetra and monoxycarbide are described. The comparison of the results of chemical and microscopic analysis as well as the loss in weight of briquets prove that spinel is the first product of interaction of alumina with solid carbon; this being independent of the carbon content in the batch. The composition of the final products corresponds to the reactions (1), (2) and (3). Thus, it was proved that  $Al_4O_4C$  and  $Al_2OC$  can be synthesized not only from the liquid phase by crystallization of the  $Al_2O_3-Al_4C_3$  melts (Ref 1) but also in the solid phase between 1700 and 1850° from alumina and carbon.

Card 2/3

On the Aluminum Oxy-carbides

SOV/20-124-1-44/69

There are 3 figures, 1 table, and 2 Soviet references.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut abrazivov i  
shlifovaniya  
(All-Union Scientific Research Institute of Abrasives and  
Grinding)

PRESENTED: July 23, 1958, by D. S. Korzhinskiy, Academician

SUBMITTED: July 29, 1958

Card 3/3

FILONENKO, N.Ye.; LAVROV, I.V.

Microstructure of electrocorundum. Ogneupory 25 no.8:359-362 '60.  
(MIRA 13:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut abrazivov i shlifovaniya.

(Corundum)

ZARETSKAYA, G.M. (Leningrad); MEL'NICHEKO, A.A. (Leningrad); FILONENKO,  
N.Ye. (Leningrad)

Investigating silicon carbide formed during the smelting  
of iron-silicon-chromium alloys. Izv. AN SSSR. Met. 1 gor.  
delo no.4:58-62 J1-Ag '64. (MIRA 17:9)

FILONENKO, N.Ye.; ZARETSKAYA, G.M.

Silicon carbide and ferrosilicochrome. Zhur. prikl. khim. 38 no.4:  
941-942 Ap '65. (MIRA 18:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut abrazivov i  
shlifovaniya.

FILONENKO, N.Ye.; IVANOV, V.I.; FEL'DGUN, L.I.

Morphology of cubic crystals of boron nitride. Dokl. AN SSSR 164  
no.6:1286-1287 0 '65. (MIRA 18:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut abrazivov i  
shlifovaniya. Submitted July 17, 1965.

L 34368-66 EWP(e)/EWT(m)/I/EWP(t)/ETI IJP(c) JT

ACC NR: AP5027228

SOURCE CODE: UR/0020/65/164/006/1286/1287

AUTHOR: Filonenko, N. Ye.; Ivanov, V. I.; Fel'dgun, L. I.

ORG: All Union Scientific-Research Institute of Abrasives and Polishing (Vsesoyuznyy nauchno-issledovatel'skiy institut abrazivov i shlifovaniya)

TITLE: Morphology of cubic boron nitride crystals

SOURCE: AN SSSR. Doklady, v. 164, no. 6, 1965, 1286-1287

TOPIC TAGS: boron compound, cubic crystal, crystal structure, boron nitride compound, x ray diffraction analysis, crystal symmetry, twinning

ABSTRACT: R. H. Wentorf (J. Chem. Phys., 34, 1, 1961) reported that the cubic boron nitride which he synthesized and which had the hardness of diamond was crystallized in the form of tetrahedrons and octahedrons. Later, F. P. Bundy and R. H. Wentorf (J. Chem. Phys., 38, 5, 1963) showed, on the basis of X-ray diffraction studies, that cubic boron nitride had the structure of sphalerite. This discrepancy promoted the recent study. The crystals, sufficiently large (0.3-0.6 mm) for crystallographic studies, were grown during work on the synthesis of nitride. The subsequent measuring of >100 crystals proved that cubic boron nitride has a hexatetrahedral type of symmetry ( $F\bar{4}3m$ ). The combination of positive  $\{111\}$  and negative  $\{1\bar{1}\bar{1}\}$  tetrahedrons is the main crystallographic form of its crystals. The most predominant were octahedral-shaped crystals with characteristic apexes in the form of a double sloping roof formed by the

Card 1/2

UDC: 548.54

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ACC NR: AP5027228

combination of two faces of hexagonal and two faces of triangular form and belonging to the positive and negative tetrahedrons, respectively. The polysynthetic and simple twins were detected in polished thin sections. They consisted of plate-like aggregates intergrown at various angles. The thickness of individuals forming polysynthetic twins varied from a fraction of  $\mu$  to several hundred  $\mu$ . As a rule, the polysynthetic twins contained numerous inclusions captured during crystallization. The microhardness of cubic boron nitride varied within the range of 7300 - 10,000 kg/mm<sup>2</sup>, with 8500-8600 kg/mm<sup>2</sup> being the most common. A study in reflected light under a metallographic microscope detected on the surface of tetrahedral faces the vicinal faces and vicinaloids, the layers and spirals of growth, the steps from several layers of growth, the inclusions of small crystals and twins of cubic boron nitride, and the inclusions of impurities. The paper was presented by Academician N. V. Belov 17 Aug 65. The authors thank V. P. Butuzova for interest in their work and discussion of results. Orig. art. has: 4 fig.

SUB CODE: 20,07/SUBM DATE: 15Jul65/ OTH REF: 002

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2/2

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1. Khar'kovskiy institut mikrobiologii, vaktsin i syverotok  
imeni Mechnikova.

DOROKHOV, Aleksandr Petrovich; KOROCHKINA, Galina Stepanovna;  
STARODUBTSEV, Viktor Aleksandrovich; TSARENKO, Vladimir  
Timofeyevich; VOLKOV, A.A., retsenzent; OGORODNEYCHUK,  
I.F., retsenzent; RUDENKO, V.S., retsenzent; TETEL'BAUM,  
Ya.I., retsenzent; FILONENKO, S.N., dots., otv. red.;  
NESTERENKO, A.S., red.

[Principles of industrial electronics] Osnovy promyshlennoi  
elektroniki. [By] A.P.Dorokhov i dr. Khar'kov, Izd-vo  
Khar'kovskogo univ., 1964. 214 p. (MIRA 17:8)

FILONENKO, S. N.

pa 76T21

MSR/Engineering  
Reamers  
Tools, Cutting

Apr 1948

"Cone-Shaped Reamer Head," S. N. Filonenko, Engr, 1 p

"Stanki 1 Instrument" No 4

Describes construction of cone-shaped reamer which permits the simultaneous formation of rough and finished holes.

76T21

FILONENKO, Serafim Nikonovich; KOSTYUKOV, Viktor Aleksandrovich; RODIN, Petr Rodionovich; GUS'KOV, Boris Sergeyevich; KADUCHENKO, A.O.,  
inzhener, redaktor; SERDYUK, V.K., inzhener; redaktor; RUMENSKIY, Ya.V.; tekhnicheskij redaktor.

[Concise manual for tool operators at machine-tractor stations]  
Kratkiy spravochnik stanochnika MTS. Kiev, Gos.nauchno-tekhn. ind-  
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(Machine-tractor stations) (Metalwork) (MLRA 9:5)

SEMINSKIY, Vitaliy Kuprianovich; FILONENKO, S.N., kandidat tekhnicheskikh nauk, dotsent, retsentsent; MIKHAYLENKO, A.A., inzhener, redaktor; SOROKA, M.S., redaktor; RUDENSKIY, Ya.V., tekhnicheskiiy redakter.

[Ways of reducing auxiliary time in high-speed cutting of metals; from work practice of the author] Puti sokrashchenia vspomogatel'nogo vremeni pri skorostnom rezanii metallov; iz opyta raboty avtora. Kiev, Gos.nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1956. 70 p. (Metal cutting) (MIRA 9:6)

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Simple measurement of the tangential component of the cutting force.  
Stan. 1 instr. 31 no.9:37 S '60. (MIRA 13:9)  
(Metal cutting)

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[Measurement of transistor parameters] Izmereniia parametrov poluprovodnikovyykh triodov. Khar'kov, Izd-vo Khar'kovskogo Gos. univ. im. A.M.Gor'kogo, 1960. 193 p. (MIRA 14:8)  
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(Plastics machining)

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Relationship between the tangential cutting force and the diameter  
of machining. Stan.i instr. 33 no.7:30-31 JI '62. (MIRA 15:7)  
(Metal cutting)

FILONENKO, Serafim Nikolayevich; AFANAS'YEV, V.F., kand. tekhn.

nauk, retsenzent; BARAB-TARLE, M.Ye., inzh., red.;

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tekhn. red.

[Metal cutting] Rezanie metallov. Moskva, Mashgiz, 1963.  
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· Dimensional wear of cutting tools in fine boring. Stan. 1  
instr. 34 no.6:33-34 Je '63. (MIRA 16:7)

(Drilling and boring)

FILONENKO, S.N.; LOMAKIN, V.K.

Dimensional wear of cutting tools in diamond boring of steel. Stan.i  
instr. 35 no.9:29-30 S '64. (MIRA 17:10)

VALITOV, Rafkat Amirkhanovich, prof.; TARASOV, Vladislav Lukich;  
SHISHKIN, Leonid Adrianovich; TSARENKO, Viktor  
Timofeyevich; FILONENKO, Sergey Nikonovich; DOMANOVA, Yelena  
Aleksyevna; BARKANOV, Nikolay Arsent'yevich; SYTYI, Gennadiy  
Fedorovich; KURILOVA, T.M., red.; TROFIMENKO, A.S., tekhn.  
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[Measurement of transistor parameters] Izmereniia paramet-  
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(Transistors)

VALITOV, Rafkat Amirkhanovich, prof.; TARASOV, Vladislav Lukich;  
SHISHKIN, Leonid Adrianovich; TSARENKO, Viktor Timofeyevich;  
FILONENKO, Sergey Nikonovich; DOMANOVA, Yelena Alekseyevna;  
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[Measurement of transistor parameters] Izmereniia parametrov  
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(g.Khar'kov)

Concerning the terminology in the field of transistor electronics.  
Izv. vys. ucheb. zav.; radiotekh. 4 no.1:106-110 Ja-F '61.

(MIRA 14:4)

(Transistors---Terminology)

FILONENKO S.Ya.

MITROFANOV, V.P.; FILONENKO, S.Ya.

Automatic control of the skip hoist of a lime kiln. Sakh.prom. 29  
no.1:9-13 '55. (MLRA 8:4)

1. Moskovskiy tekhnologicheskij institut pishchevoy promyshlennosti  
(for Mitrofanov). 2.Veselo-Podolyanskiy sakharnyy zavod (for Filo-  
nenko).

(Hoisting machinery)(Sugar industry--Equipment and supplies)  
(Electric controllers)

FILONENKO, V.; PETROV, A.

Disseminating practices of the "Borets" Collective Farm.  
Zemledelie 23 no.9:72 S '61. (MIRA 14:12)  
(Grain)

FILONENKO, V., starshiy leytenant

Reaching the essence of the matter. Komm. Vooruzh. Sil. 46  
no. 21:63-65 N '65 (MIRA 19:1)

FILONENKO, V.A.

Improvement of the backboard of the ZIL-585 Ag '65.

(MIRA 18:9)

9.9842 (1041, 1046, 1060)

89077  
S/169/61/000/001/004/011  
A005/A001

Translation from: Referativnyy zhurnal, Geofizika, 1961, No. 1, p. 6, # 1039

AUTHORS: Filonenko, V. A., Checha, V. A., Zelenkov, V. Ye., Vyshlov, V. P.

TITLE: The Determination of the Horizontal Speed of Motion of Ionospheric Heterogeneities From Recordings of Fadings at Three Spaced Points

PERIODICAL: "Tr. Sibirsk. fiz.-tekhn. in-ta pri Tomskom un-te", 1959, No. 37, pp. 384-387

TEXT: Results are presented of observations of the drifts of heterogeneities in the ionosphere, which were carried out by the ionospheric laboratory of the Siberian Physicotechnical Institute in the period from September 1957 to March 1958 according to the program of the IGY. The equipment for measuring the drift rate by the method of spaced reception with small base is briefly described. The processing of the recordings was carried out in the main by the "similar fading" method. It is shown that, as a rule, the speeds in the F2-layer (100-120 m/sec) are higher than the speeds in the E-layer (80-90 m/sec). For both layers, the speeds are higher in winter than in autumn. During magnetic storms, the drift speed considerably increases, particularly sharply in the F2-layer. It is shown

Card 1/2

89077

S/169/61/000/001/004/011  
A005/A001

The Determination of the Horizontal Speed of Motion of Ionospheric Heterogeneities  
From Recordings of Fadings at Three Spaced Points

that the drift speeds have regular diurnal and seasonal regularities. For the E-layer, the north component of the speed has in autumn a constant component of about 30 m/sec directed northwards, and in winter of about 40 m/sec directed southwards. The east component has in autumn a constant component of about 25 m/sec directed eastwards. For the F2-layer, the meridional component is directed northwards in autumn (about 50 m/sec), and southwards in winter (about 30 m/sec). The latitude component is directed westwards in autumn (25 m/sec), in winter it has no predominant direction. The harmonic analysis of the speeds showed that in the E-layer the 12-hours-component predominates, and in the F2-layer, fluctuations with the 24-hours period are observed besides half-diurnal fluctuations.

E. Kazimirovskiy

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

ACC NR: AP7005555

SOURCE CODE: UR/0108/67/022/001/0068/0074

AUTHOR: *(Active member)* Filonenko, V. A.; *(Active member)* Yemel'yanov, V. Ye. Stel'mashenko *(Active member)*

ORG: Scientific Technical Society of Radio Engineering and Electronics (Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektroniki)

TITLE: Errors in determining the bearing by means of instantaneous amplitude comparison of signals in systems with elliptically polarized antennas

SOURCE: Radiotekhnika, v. 22, no. 1, 1967, 68-74

TOPIC TAGS: direction finding, direction instrument, helical antenna, *pulse signal, pulse amplitude*

ABSTRACT: The authors consider an error which may occur in determining the bearing of a source with unknown radiation polarization when the method of instantaneous amplitude comparison of signals is employed. A formula is derived for computing the bearing characteristics of antennas with elliptical polarization. Some computation results for the case of ~~regular~~ helical antennas are given. It was concluded that the bearing characteristics of a system which is used to develop split bearing indication of regular helical antennas with helixes wound in the same direction vary when the ellipticity factor changes and during variations of the ellipse of the incident field. When the bearing of an object is determined using the method of the instantaneous amplitude comparison of signals in respect to the bearing characteristic of the orientation of the incident field is unknown, the result may be incorrect. If the helixes are wound in opposite directions it is impossible to determine

Card 1/2

UDC: 621.396.982

ACC NR: AP7005555

the bearing of the object.

[CS]

SUB CODE: 09/ SUBM DATE: 20 Jan 64/ OTH REF: 001/

Card 2/2

FILONENKO, V.F.

Practical work in stockbreeding in the secondary school. Politekh.  
obuch. no.11:39-41 N '57. (MIRA 10:10)

1.Kamenno-Stepnaya srednyaya shkola Voronezhskoy oblasti.  
(Stock and stockbreeding--Study and teaching)

FILONENKO, V.N.

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National Economy of the U.S.S.R. in 1964. Inform.biul.VDNKH  
no.1:2-3 Ja '64. (MIRA 17:4)

1. Glavnyy metodist ob'yedinennogo pavil'ona "Zemledeliya"  
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FEFILOV, V.V.; SNESAREV, K.A.; PERSHANOVA, M.G.; FILONENKO, Ya.R.

Crushing as a method for increasing the wood pulp yield of slash.  
Gidroliz. i lesokhim. prom. 8 no.1:6-7 '55. (MLRA 8:10)

1. Tsentral'nyy nauchno-issledovatel'skiy lesokhimicheskiy institut  
(Wood pulp)

FILONENKO, YA. R.

Thermal decomposition of bark. V. V. Pavlov, E. G. Kinskikh, and Ya. R. Filonenko. *Gidroliz i Lignin* 1966, 9, No. 5, 75-76. 2 p. Spruce bark. 30-40% wood in bark. at 200°C. was 10-15%. at 350-400°C. 40-50%. at 450-500°C. 60-70%. at 550-600°C. 80-90%. at 650-700°C. 90-95%. at 750-800°C. 95-98%. at 850-900°C. 98-99%. at 950-1000°C. 99-100%. The heat value was 11.1-11.3 kcal. I was also treated with zinc generation and for 1-10% CH<sub>4</sub>, 1-10% CH<sub>2</sub>, 1-10% CH<sub>3</sub>, 1-10% C<sub>2</sub>H<sub>4</sub>, 1-10% C<sub>2</sub>H<sub>6</sub>, 1-10% C<sub>3</sub>H<sub>8</sub>, 1-10% C<sub>4</sub>H<sub>10</sub>, 1-10% C<sub>5</sub>H<sub>12</sub>, 1-10% C<sub>6</sub>H<sub>14</sub>, 1-10% C<sub>7</sub>H<sub>16</sub>, 1-10% C<sub>8</sub>H<sub>18</sub>, 1-10% C<sub>9</sub>H<sub>20</sub>, 1-10% C<sub>10</sub>H<sub>22</sub>, 1-10% C<sub>11</sub>H<sub>24</sub>, 1-10% C<sub>12</sub>H<sub>26</sub>, 1-10% C<sub>13</sub>H<sub>28</sub>, 1-10% C<sub>14</sub>H<sub>30</sub>, 1-10% C<sub>15</sub>H<sub>32</sub>, 1-10% C<sub>16</sub>H<sub>34</sub>, 1-10% C<sub>17</sub>H<sub>36</sub>, 1-10% C<sub>18</sub>H<sub>38</sub>, 1-10% C<sub>19</sub>H<sub>40</sub>, 1-10% C<sub>20</sub>H<sub>42</sub>, 1-10% C<sub>21</sub>H<sub>44</sub>, 1-10% C<sub>22</sub>H<sub>46</sub>, 1-10% C<sub>23</sub>H<sub>48</sub>, 1-10% C<sub>24</sub>H<sub>50</sub>, 1-10% C<sub>25</sub>H<sub>52</sub>, 1-10% C<sub>26</sub>H<sub>54</sub>, 1-10% C<sub>27</sub>H<sub>56</sub>, 1-10% C<sub>28</sub>H<sub>58</sub>, 1-10% C<sub>29</sub>H<sub>60</sub>, 1-10% C<sub>30</sub>H<sub>62</sub>, 1-10% C<sub>31</sub>H<sub>64</sub>, 1-10% C<sub>32</sub>H<sub>66</sub>, 1-10% C<sub>33</sub>H<sub>68</sub>, 1-10% C<sub>34</sub>H<sub>70</sub>, 1-10% C<sub>35</sub>H<sub>72</sub>, 1-10% C<sub>36</sub>H<sub>74</sub>, 1-10% C<sub>37</sub>H<sub>76</sub>, 1-10% C<sub>38</sub>H<sub>78</sub>, 1-10% C<sub>39</sub>H<sub>80</sub>, 1-10% C<sub>40</sub>H<sub>82</sub>, 1-10% C<sub>41</sub>H<sub>84</sub>, 1-10% C<sub>42</sub>H<sub>86</sub>, 1-10% C<sub>43</sub>H<sub>88</sub>, 1-10% C<sub>44</sub>H<sub>90</sub>, 1-10% C<sub>45</sub>H<sub>92</sub>, 1-10% C<sub>46</sub>H<sub>94</sub>, 1-10% C<sub>47</sub>H<sub>96</sub>, 1-10% C<sub>48</sub>H<sub>98</sub>, 1-10% C<sub>49</sub>H<sub>100</sub>, 1-10% C<sub>50</sub>H<sub>102</sub>, 1-10% C<sub>51</sub>H<sub>104</sub>, 1-10% C<sub>52</sub>H<sub>106</sub>, 1-10% C<sub>53</sub>H<sub>108</sub>, 1-10% C<sub>54</sub>H<sub>110</sub>, 1-10% C<sub>55</sub>H<sub>112</sub>, 1-10% C<sub>56</sub>H<sub>114</sub>, 1-10% C<sub>57</sub>H<sub>116</sub>, 1-10% C<sub>58</sub>H<sub>118</sub>, 1-10% C<sub>59</sub>H<sub>120</sub>, 1-10% C<sub>60</sub>H<sub>122</sub>, 1-10% C<sub>61</sub>H<sub>124</sub>, 1-10% C<sub>62</sub>H<sub>126</sub>, 1-10% C<sub>63</sub>H<sub>128</sub>, 1-10% C<sub>64</sub>H<sub>130</sub>, 1-10% C<sub>65</sub>H<sub>132</sub>, 1-10% C<sub>66</sub>H<sub>134</sub>, 1-10% C<sub>67</sub>H<sub>136</sub>, 1-10% C<sub>68</sub>H<sub>138</sub>, 1-10% C<sub>69</sub>H<sub>140</sub>, 1-10% C<sub>70</sub>H<sub>142</sub>, 1-10% C<sub>71</sub>H<sub>144</sub>, 1-10% C<sub>72</sub>H<sub>146</sub>, 1-10% C<sub>73</sub>H<sub>148</sub>, 1-10% C<sub>74</sub>H<sub>150</sub>, 1-10% C<sub>75</sub>H<sub>152</sub>, 1-10% C<sub>76</sub>H<sub>154</sub>, 1-10% C<sub>77</sub>H<sub>156</sub>, 1-10% C<sub>78</sub>H<sub>158</sub>, 1-10% C<sub>79</sub>H<sub>160</sub>, 1-10% C<sub>80</sub>H<sub>162</sub>, 1-10% C<sub>81</sub>H<sub>164</sub>, 1-10% C<sub>82</sub>H<sub>166</sub>, 1-10% C<sub>83</sub>H<sub>168</sub>, 1-10% C<sub>84</sub>H<sub>170</sub>, 1-10% C<sub>85</sub>H<sub>172</sub>, 1-10% C<sub>86</sub>H<sub>174</sub>, 1-10% C<sub>87</sub>H<sub>176</sub>, 1-10% C<sub>88</sub>H<sub>178</sub>, 1-10% C<sub>89</sub>H<sub>180</sub>, 1-10% C<sub>90</sub>H<sub>182</sub>, 1-10% C<sub>91</sub>H<sub>184</sub>, 1-10% C<sub>92</sub>H<sub>186</sub>, 1-10% C<sub>93</sub>H<sub>188</sub>, 1-10% C<sub>94</sub>H<sub>190</sub>, 1-10% C<sub>95</sub>H<sub>192</sub>, 1-10% C<sub>96</sub>H<sub>194</sub>, 1-10% C<sub>97</sub>H<sub>196</sub>, 1-10% C<sub>98</sub>H<sub>198</sub>, 1-10% C<sub>99</sub>H<sub>200</sub>, 1-10% C<sub>100</sub>H<sub>202</sub>, 1-10% C<sub>101</sub>H<sub>204</sub>, 1-10% C<sub>102</sub>H<sub>206</sub>, 1-10% C<sub>103</sub>H<sub>208</sub>, 1-10% C<sub>104</sub>H<sub>210</sub>, 1-10% C<sub>105</sub>H<sub>212</sub>, 1-10% C<sub>106</sub>H<sub>214</sub>, 1-10% C<sub>107</sub>H<sub>216</sub>, 1-10% C<sub>108</sub>H<sub>218</sub>, 1-10% C<sub>109</sub>H<sub>220</sub>, 1-10% C<sub>110</sub>H<sub>222</sub>, 1-10% C<sub>111</sub>H<sub>224</sub>, 1-10% C<sub>112</sub>H<sub>226</sub>, 1-10% C<sub>113</sub>H<sub>228</sub>, 1-10% C<sub>114</sub>H<sub>230</sub>, 1-10% C<sub>115</sub>H<sub>232</sub>, 1-10% C<sub>116</sub>H<sub>234</sub>, 1-10% C<sub>117</sub>H<sub>236</sub>, 1-10% C<sub>118</sub>H<sub>238</sub>, 1-10% C<sub>119</sub>H<sub>240</sub>, 1-10% C<sub>120</sub>H<sub>242</sub>, 1-10% C<sub>121</sub>H<sub>244</sub>, 1-10% C<sub>122</sub>H<sub>246</sub>, 1-10% C<sub>123</sub>H<sub>248</sub>, 1-10% C<sub>124</sub>H<sub>250</sub>, 1-10% C<sub>125</sub>H<sub>252</sub>, 1-10% C<sub>126</sub>H<sub>254</sub>, 1-10% C<sub>127</sub>H<sub>256</sub>, 1-10% C<sub>128</sub>H<sub>258</sub>, 1-10% C<sub>129</sub>H<sub>260</sub>, 1-10% C<sub>130</sub>H<sub>262</sub>, 1-10% C<sub>131</sub>H<sub>264</sub>, 1-10% C<sub>132</sub>H<sub>266</sub>, 1-10% C<sub>133</sub>H<sub>268</sub>, 1-10% C<sub>134</sub>H<sub>270</sub>, 1-10% C<sub>135</sub>H<sub>272</sub>, 1-10% C<sub>136</sub>H<sub>274</sub>, 1-10% C<sub>137</sub>H<sub>276</sub>, 1-10% C<sub>138</sub>H<sub>278</sub>, 1-10% C<sub>139</sub>H<sub>280</sub>, 1-10% C<sub>140</sub>H<sub>282</sub>, 1-10% C<sub>141</sub>H<sub>284</sub>, 1-10% C<sub>142</sub>H<sub>286</sub>, 1-10% C<sub>143</sub>H<sub>288</sub>, 1-10% C<sub>144</sub>H<sub>290</sub>, 1-10% C<sub>145</sub>H<sub>292</sub>, 1-10% C<sub>146</sub>H<sub>294</sub>, 1-10% C<sub>147</sub>H<sub>296</sub>, 1-10% C<sub>148</sub>H<sub>298</sub>, 1-10% C<sub>149</sub>H<sub>300</sub>, 1-10% C<sub>150</sub>H<sub>302</sub>, 1-10% C<sub>151</sub>H<sub>304</sub>, 1-10% C<sub>152</sub>H<sub>306</sub>, 1-10% C<sub>153</sub>H<sub>308</sub>, 1-10% C<sub>154</sub>H<sub>310</sub>, 1-10% C<sub>155</sub>H<sub>312</sub>, 1-10% C<sub>156</sub>H<sub>314</sub>, 1-10% C<sub>157</sub>H<sub>316</sub>, 1-10% C<sub>158</sub>H<sub>318</sub>, 1-10% C<sub>159</sub>H<sub>320</sub>, 1-10% C<sub>160</sub>H<sub>322</sub>, 1-10% C<sub>161</sub>H<sub>324</sub>, 1-10% C<sub>162</sub>H<sub>326</sub>, 1-10% C<sub>163</sub>H<sub>328</sub>, 1-10% C<sub>164</sub>H<sub>330</sub>, 1-10% C<sub>165</sub>H<sub>332</sub>, 1-10% C<sub>166</sub>H<sub>334</sub>, 1-10% C<sub>167</sub>H<sub>336</sub>, 1-10% C<sub>168</sub>H<sub>338</sub>, 1-10% C<sub>169</sub>H<sub>340</sub>, 1-10% C<sub>170</sub>H<sub>342</sub>, 1-10% C<sub>171</sub>H<sub>344</sub>, 1-10% C<sub>172</sub>H<sub>346</sub>, 1-10% C<sub>173</sub>H<sub>348</sub>, 1-10% C<sub>174</sub>H<sub>350</sub>, 1-10% C<sub>175</sub>H<sub>352</sub>, 1-10% C<sub>176</sub>H<sub>354</sub>, 1-10% C<sub>177</sub>H<sub>356</sub>, 1-10% C<sub>178</sub>H<sub>358</sub>, 1-10% C<sub>179</sub>H<sub>360</sub>, 1-10% C<sub>180</sub>H<sub>362</sub>, 1-10% C<sub>181</sub>H<sub>364</sub>, 1-10% C<sub>182</sub>H<sub>366</sub>, 1-10% C<sub>183</sub>H<sub>368</sub>, 1-10% C<sub>184</sub>H<sub>370</sub>, 1-10% C<sub>185</sub>H<sub>372</sub>, 1-10% C<sub>186</sub>H<sub>374</sub>, 1-10% C<sub>187</sub>H<sub>376</sub>, 1-10% C<sub>188</sub>H<sub>378</sub>, 1-10% C<sub>189</sub>H<sub>380</sub>, 1-10% C<sub>190</sub>H<sub>382</sub>, 1-10% C<sub>191</sub>H<sub>384</sub>, 1-10% C<sub>192</sub>H<sub>386</sub>, 1-10% C<sub>193</sub>H<sub>388</sub>, 1-10% C<sub>194</sub>H<sub>390</sub>, 1-10% C<sub>195</sub>H<sub>392</sub>, 1-10% C<sub>196</sub>H<sub>394</sub>, 1-10% C<sub>197</sub>H<sub>396</sub>, 1-10% C<sub>198</sub>H<sub>398</sub>, 1-10% C<sub>199</sub>H<sub>400</sub>, 1-10% C<sub>200</sub>H<sub>402</sub>, 1-10% C<sub>201</sub>H<sub>404</sub>, 1-10% C<sub>202</sub>H<sub>406</sub>, 1-10% C<sub>203</sub>H<sub>408</sub>, 1-10% C<sub>204</sub>H<sub>410</sub>, 1-10% C<sub>205</sub>H<sub>412</sub>, 1-10% C<sub>206</sub>H<sub>414</sub>, 1-10% C<sub>207</sub>H<sub>416</sub>, 1-10% C<sub>208</sub>H<sub>418</sub>, 1-10% C<sub>209</sub>H<sub>420</sub>, 1-10% C<sub>210</sub>H<sub>422</sub>, 1-10% C<sub>211</sub>H<sub>424</sub>, 1-10% C<sub>212</sub>H<sub>426</sub>, 1-10% C<sub>213</sub>H<sub>428</sub>, 1-10% C<sub>214</sub>H<sub>430</sub>, 1-10% C<sub>215</sub>H<sub>432</sub>, 1-10% C<sub>216</sub>H<sub>434</sub>, 1-10% C<sub>217</sub>H<sub>436</sub>, 1-10% C<sub>218</sub>H<sub>438</sub>, 1-10% C<sub>219</sub>H<sub>440</sub>, 1-10% C<sub>220</sub>H<sub>442</sub>, 1-10% C<sub>221</sub>H<sub>444</sub>, 1-10% C<sub>222</sub>H<sub>446</sub>, 1-10% C<sub>223</sub>H<sub>448</sub>, 1-10% C<sub>224</sub>H<sub>450</sub>, 1-10% C<sub>225</sub>H<sub>452</sub>, 1-10% C<sub>226</sub>H<sub>454</sub>, 1-10% C<sub>227</sub>H<sub>456</sub>, 1-10% C<sub>228</sub>H<sub>458</sub>, 1-10% C<sub>229</sub>H<sub>460</sub>, 1-10% C<sub>230</sub>H<sub>462</sub>, 1-10% C<sub>231</sub>H<sub>464</sub>, 1-10% C<sub>232</sub>H<sub>466</sub>, 1-10% C<sub>233</sub>H<sub>468</sub>, 1-10% C<sub>234</sub>H<sub>470</sub>, 1-10% C<sub>235</sub>H<sub>472</sub>, 1-10% C<sub>236</sub>H<sub>474</sub>, 1-10% C<sub>237</sub>H<sub>476</sub>, 1-10% C<sub>238</sub>H<sub>478</sub>, 1-10% C<sub>239</sub>H<sub>480</sub>, 1-10% C<sub>240</sub>H<sub>482</sub>, 1-10% C<sub>241</sub>H<sub>484</sub>, 1-10% C<sub>242</sub>H<sub>486</sub>, 1-10% C<sub>243</sub>H<sub>488</sub>, 1-10% C<sub>244</sub>H<sub>490</sub>, 1-10% C<sub>245</sub>H<sub>492</sub>, 1-10% C<sub>246</sub>H<sub>494</sub>, 1-10% C<sub>247</sub>H<sub>496</sub>, 1-10% C<sub>248</sub>H<sub>498</sub>, 1-10% C<sub>249</sub>H<sub>500</sub>, 1-10% C<sub>250</sub>H<sub>502</sub>, 1-10% C<sub>251</sub>H<sub>504</sub>, 1-10% C<sub>252</sub>H<sub>506</sub>, 1-10% C<sub>253</sub>H<sub>508</sub>, 1-10% C<sub>254</sub>H<sub>510</sub>, 1-10% C<sub>255</sub>H<sub>512</sub>, 1-10% C<sub>256</sub>H<sub>514</sub>, 1-10% C<sub>257</sub>H<sub>516</sub>, 1-10% C<sub>258</sub>H<sub>518</sub>, 1-10% C<sub>259</sub>H<sub>520</sub>, 1-10% C<sub>260</sub>H<sub>522</sub>, 1-10% C<sub>261</sub>H<sub>524</sub>, 1-10% C<sub>262</sub>H<sub>526</sub>, 1-10% C<sub>263</sub>H<sub>528</sub>, 1-10% C<sub>264</sub>H<sub>530</sub>, 1-10% C<sub>265</sub>H<sub>532</sub>, 1-10% C<sub>266</sub>H<sub>534</sub>, 1-10% C<sub>267</sub>H<sub>536</sub>, 1-10% C<sub>268</sub>H<sub>538</sub>, 1-10% C<sub>269</sub>H<sub>540</sub>, 1-10% C<sub>270</sub>H<sub>542</sub>, 1-10% C<sub>271</sub>H<sub>544</sub>, 1-10% C<sub>272</sub>H<sub>546</sub>, 1-10% C<sub>273</sub>H<sub>548</sub>, 1-10% C<sub>274</sub>H<sub>550</sub>, 1-10% C<sub>275</sub>H<sub>552</sub>, 1-10% C<sub>276</sub>H<sub>554</sub>, 1-10% C<sub>277</sub>H<sub>556</sub>, 1-10% C<sub>278</sub>H<sub>558</sub>, 1-10% C<sub>279</sub>H<sub>560</sub>, 1-10% C<sub>280</sub>H<sub>562</sub>, 1-10% C<sub>281</sub>H<sub>564</sub>, 1-10% C<sub>282</sub>H<sub>566</sub>, 1-10% C<sub>283</sub>H<sub>568</sub>, 1-10% C<sub>284</sub>H<sub>570</sub>, 1-10% C<sub>285</sub>H<sub>572</sub>, 1-10% C<sub>286</sub>H<sub>574</sub>, 1-10% C<sub>287</sub>H<sub>576</sub>, 1-10% C<sub>288</sub>H<sub>578</sub>, 1-10% C<sub>289</sub>H<sub>580</sub>, 1-10% C<sub>290</sub>H<sub>582</sub>, 1-10% C<sub>291</sub>H<sub>584</sub>, 1-10% C<sub>292</sub>H<sub>586</sub>, 1-10% C<sub>293</sub>H<sub>588</sub>, 1-10% C<sub>294</sub>H<sub>590</sub>, 1-10% C<sub>295</sub>H<sub>592</sub>, 1-10% C<sub>296</sub>H<sub>594</sub>, 1-10% C<sub>297</sub>H<sub>596</sub>, 1-10% C<sub>298</sub>H<sub>598</sub>, 1-10% C<sub>299</sub>H<sub>600</sub>, 1-10% C<sub>300</sub>H<sub>602</sub>, 1-10% C<sub>301</sub>H<sub>604</sub>, 1-10% C<sub>302</sub>H<sub>606</sub>, 1-10% C<sub>303</sub>H<sub>608</sub>, 1-10% C<sub>304</sub>H<sub>610</sub>, 1-10% C<sub>305</sub>H<sub>612</sub>, 1-10% C<sub>306</sub>H<sub>614</sub>, 1-10% C<sub>307</sub>H<sub>616</sub>, 1-10% C<sub>308</sub>H<sub>618</sub>, 1-10% C<sub>309</sub>H<sub>620</sub>, 1-10% C<sub>310</sub>H<sub>622</sub>, 1-10% C<sub>311</sub>H<sub>624</sub>, 1-10% C<sub>312</sub>H<sub>626</sub>, 1-10% C<sub>313</sub>H<sub>628</sub>, 1-10% C<sub>314</sub>H<sub>630</sub>, 1-10% C<sub>315</sub>H<sub>632</sub>, 1-10% C<sub>316</sub>H<sub>634</sub>, 1-10% C<sub>317</sub>H<sub>636</sub>, 1-10% C<sub>318</sub>H<sub>638</sub>, 1-10% C<sub>319</sub>H<sub>640</sub>, 1-10% C<sub>320</sub>H<sub>642</sub>, 1-10% C<sub>321</sub>H<sub>644</sub>, 1-10% C<sub>322</sub>H<sub>646</sub>, 1-10% C<sub>323</sub>H<sub>648</sub>, 1-10% C<sub>324</sub>H<sub>650</sub>, 1-10% C<sub>325</sub>H<sub>652</sub>, 1-10% C<sub>326</sub>H<sub>654</sub>, 1-10% C<sub>327</sub>H<sub>656</sub>, 1-10% C<sub>328</sub>H<sub>658</sub>, 1-10% C<sub>329</sub>H<sub>660</sub>, 1-10% C<sub>330</sub>H<sub>662</sub>, 1-10% C<sub>331</sub>H<sub>664</sub>, 1-10% C<sub>332</sub>H<sub>666</sub>, 1-10% C<sub>333</sub>H<sub>668</sub>, 1-10% C<sub>334</sub>H<sub>670</sub>, 1-10% C<sub>335</sub>H<sub>672</sub>, 1-10% C<sub>336</sub>H<sub>674</sub>, 1-10% C<sub>337</sub>H<sub>676</sub>, 1-10% C<sub>338</sub>H<sub>678</sub>, 1-10% C<sub>339</sub>H<sub>680</sub>, 1-10% C<sub>340</sub>H<sub>682</sub>, 1-10% C<sub>341</sub>H<sub>684</sub>, 1-10% C<sub>342</sub>H<sub>686</sub>, 1-10% C<sub>343</sub>H<sub>688</sub>, 1-10% C<sub>344</sub>H<sub>690</sub>, 1-10% C<sub>345</sub>H<sub>692</sub>, 1-10% C<sub>346</sub>H<sub>694</sub>, 1-10% C<sub>347</sub>H<sub>696</sub>, 1-10% C<sub>348</sub>H<sub>698</sub>, 1-10% C<sub>349</sub>H<sub>700</sub>, 1-10% C<sub>350</sub>H<sub>702</sub>, 1-10% C<sub>351</sub>H<sub>704</sub>, 1-10% C<sub>352</sub>H<sub>706</sub>, 1-10% C<sub>353</sub>H<sub>708</sub>, 1-10% C<sub>354</sub>H<sub>710</sub>, 1-10% C<sub>355</sub>H<sub>712</sub>, 1-10% C<sub>356</sub>H<sub>714</sub>, 1-10% C<sub>357</sub>H<sub>716</sub>, 1-10% C<sub>358</sub>H<sub>718</sub>, 1-10% C<sub>359</sub>H<sub>720</sub>, 1-10% C<sub>360</sub>H<sub>722</sub>, 1-10% C<sub>361</sub>H<sub>724</sub>, 1-10% C<sub>362</sub>H<sub>726</sub>, 1-10% C<sub>363</sub>H<sub>728</sub>, 1-10% C<sub>364</sub>H<sub>730</sub>, 1-10% C<sub>365</sub>H<sub>732</sub>, 1-10% C<sub>366</sub>H<sub>734</sub>, 1-10% C<sub>367</sub>H<sub>736</sub>, 1-10% C<sub>368</sub>H<sub>738</sub>, 1-10% C<sub>369</sub>H<sub>740</sub>, 1-10% C<sub>370</sub>H<sub>742</sub>, 1-10% C<sub>371</sub>H<sub>744</sub>, 1-10% C<sub>372</sub>H<sub>746</sub>, 1-10% C<sub>373</sub>H<sub>748</sub>, 1-10% C<sub>374</sub>H<sub>750</sub>, 1-10% C<sub>375</sub>H<sub>752</sub>, 1-10% C<sub>376</sub>H<sub>754</sub>, 1-10% C<sub>377</sub>H<sub>756</sub>, 1-10% C<sub>378</sub>H<sub>758</sub>, 1-10% C<sub>379</sub>H<sub>760</sub>, 1-10% C<sub>380</sub>H<sub>762</sub>, 1-10% C<sub>381</sub>H<sub>764</sub>, 1-10% C<sub>382</sub>H<sub>766</sub>, 1-10% C<sub>383</sub>H<sub>768</sub>, 1-10% C<sub>384</sub>H<sub>770</sub>, 1-10% C<sub>385</sub>H<sub>772</sub>, 1-10% C<sub>386</sub>H<sub>774</sub>, 1-10% C<sub>387</sub>H<sub>776</sub>, 1-10% C<sub>388</sub>H<sub>778</sub>, 1-10% C<sub>389</sub>H<sub>780</sub>, 1-10% C<sub>390</sub>H<sub>782</sub>, 1-10% C<sub>391</sub>H<sub>784</sub>, 1-10% C<sub>392</sub>H<sub>786</sub>, 1-10% C<sub>393</sub>H<sub>788</sub>, 1-10% C<sub>394</sub>H<sub>790</sub>, 1-10% C<sub>395</sub>H<sub>792</sub>, 1-10% C<sub>396</sub>H<sub>794</sub>, 1-10% C<sub>397</sub>H<sub>796</sub>, 1-10% C<sub>398</sub>H<sub>798</sub>, 1-10% C<sub>399</sub>H<sub>800</sub>, 1-10% C<sub>400</sub>H<sub>802</sub>, 1-10% C<sub>401</sub>H<sub>804</sub>, 1-10% C<sub>402</sub>H<sub>806</sub>, 1-10% C<sub>403</sub>H<sub>808</sub>, 1-10% C<sub>404</sub>H<sub>810</sub>, 1-10% C<sub>405</sub>H<sub>812</sub>, 1-10% C<sub>406</sub>H<sub>814</sub>, 1-10% C<sub>407</sub>H<sub>816</sub>, 1-10% C<sub>408</sub>H<sub>818</sub>, 1-10% C<sub>409</sub>H<sub>820</sub>, 1-10% C<sub>410</sub>H<sub>822</sub>, 1-10% C<sub>411</sub>H<sub>824</sub>, 1-10% C<sub>412</sub>H<sub>826</sub>, 1-10% C<sub>413</sub>H<sub>828</sub>, 1-10% C<sub>414</sub>H<sub>830</sub>, 1-10% C<sub>415</sub>H<sub>832</sub>, 1-10% C<sub>416</sub>H<sub>834</sub>, 1-10% C<sub>417</sub>H<sub>836</sub>, 1-10% 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C<sub>444</sub>H<sub>890</sub>, 1-10% C<sub>445</sub>H<sub>892</sub>, 1-10% C<sub>446</sub>H<sub>894</sub>, 1-10% C<sub>447</sub>H<sub>896</sub>, 1-10% C<sub>448</sub>H<sub>898</sub>, 1-10% C<sub>449</sub>H<sub>900</sub>, 1-10% C<sub>450</sub>H<sub>902</sub>, 1-10% C<sub>451</sub>H<sub>904</sub>, 1-10% C<sub>452</sub>H<sub>906</sub>, 1-10% C<sub>453</sub>H<sub>908</sub>, 1-10% C<sub>454</sub>H<sub>910</sub>, 1-10% C<sub>455</sub>H<sub>912</sub>, 1-10% C<sub>456</sub>H<sub>914</sub>, 1-10% C<sub>457</sub>H<sub>916</sub>, 1-10% C<sub>458</sub>H<sub>918</sub>, 1-10% C<sub>459</sub>H<sub>920</sub>, 1-10% C<sub>460</sub>H<sub>922</sub>, 1-10% C<sub>461</sub>H<sub>924</sub>, 1-10% C<sub>462</sub>H<sub>926</sub>, 1-10% C<sub>463</sub>H<sub>928</sub>, 1-10% C<sub>464</sub>H<sub>930</sub>, 1-10% C<sub>465</sub>H<sub>932</sub>, 1-10% C<sub>466</sub>H<sub>934</sub>, 1-10% C<sub>467</sub>H<sub>936</sub>, 1-10% C<sub>468</sub>H<sub>938</sub>, 1-10% C<sub>469</sub>H<sub>940</sub>, 1-10% C<sub>470</sub>H<sub>942</sub>, 1-10% C<sub>471</sub>H<sub>944</sub>, 1-10% C<sub>472</sub>H<sub>946</sub>, 1-10% C<sub>473</sub>H<sub>948</sub>, 1-10% C<sub>474</sub>H<sub>950</sub>, 1-10% C<sub>475</sub>H<sub>952</sub>, 1-10% C<sub>476</sub>H<sub>954</sub>, 1-10% C<sub>477</sub>H<sub>956</sub>, 1-10% C<sub>478</sub>H<sub>958</sub>, 1-10% C<sub>479</sub>H<sub>960</sub>, 1-10% C<sub>480</sub>H<sub>962</sub>, 1-10% C<sub>481</sub>H<sub>964</sub>, 1-10% C<sub>482</sub>H<sub>966</sub>, 1-10% C<sub>48</sub>

FILONENKO, Yu.V.

Cable-suspended crossing of the Amu Darya, Stroi.truboprov. 9  
no.2:22-23 F '64. (MIRA 17:3)

1. Stroitel'noye upravleniye No.2 tresta Naftoprovodmontazh. Tash-  
kent.

BELOKON', S.M., inzh.; MURMILOV, A.V., inzh.; ~~FILONENKO, Yu.Ya., inzh.~~

Determining the temperature of semicoke ignition.

Teploenergetika 9 no.11:52-54 N '62.

(MIRA 15:10)

1. Institut teploenergetiki AN UkrSSR.  
(Coke—Combustion)

BAZEYEV, Ye.T.; BELOKON', S.M.; FILONENKO, Yu.Ya.; SHCHEGOLEV, G.M.

Dust removal from gases in the precondensers of industrial  
power systems. Khim. i tekhn. topl. i masel 10 no.3:37-41  
Mr '65. (MIRA 18:11)

FILONENKO-BORODICH, M. M.

DECEASED  
(c1962)

1963/3

EQUATIONS

FILONETS, I.

USSR/Miscellaneous - Radio lectures

Card 1/1      Pub. 89 - 6/28

Authors :      Filonets, I.

Title :      We are aiding the organizations in their initial stage of development

Periodical :      Radio 4, page 10, Apr 1955

Abstract :      A short article is presented concerning radio lectures and instructions in the field of radio and television extended by the personnel of the Chelyabinsk province radio club, for the benefit of regional radio circles and radio amateur clubs. Illustration.

Institution :      .....

Submitted :      .....

FILONETS, I.

New models. Radio no.4:17; Ap '56. (MLRA 9:7)

1. Nachal'nik Chelyabinskogo oblastnogo radiokluba.  
(Radio--Apparatus and supplies)

FILONETS, P.P.

The Ili Delta. Trudy Otd. geog. AN Kazakh. SSR no.10:107-114  
'63. (MIRA 16:10)

FILONETS, P.P.

Overgrowth of reeds in the Alako' lake group and their  
significance for the national economy. Trudy Otd. geog.  
AN Kazakh. SSR no.11:192-202 '65. (MIRA 18:8)

KUZNETSOV, P.A., student V kursa; FILONETS, V.I., student V kursa

Using experience acquired in the Moscow Basin for improving stoping  
in Tula and Lipetsk region iron mines. Nauch.rab.stud. GNSO MGI  
no.5:37-53 '57. (MIRA 11:11)  
(Moscow Basin--Stoping (Mining)) (Tula Province--Iron mines and  
mining) (Lipetsk Province--Iron mines and mining)

FILONICH, V.S., assistant

Categories of the productive force of labor "and labor productivity."  
Trudy Khar'.inzh.-ekon.inst. 8:73-85 '57. (MIRA 12:6)  
(Economics)

ARTEMENKO, G.P.[Artemenko, H.P.]; VORONINA, O.F.; SEMEYKIN, M.S.;  
FILONICH, V.S.[Filonych, V.S.]; NOSACH, I.P.; CHULKOV,  
T.G.[Chulkov, T.H.]; TENENBAUM, A.B.KIFORENKO, I.S.  
[Kyforenko, I.S.], red.; LEVCHENKO, O.K., tekhn. red.

[Work incentives in the period of the large-scale building  
of communism] Stymuliuvannia pratsi v period rozhornutoho  
budivnytstva komunizmu. Kyiv, Derzhpolityvydav URSR, 1964.  
166 p. (MIRA 17:3)

1. Sotrudniki kafedry politicheskoy ekonomii Kharkovskogo  
inzhenerno-ekonomicheskogo instituta (for all except  
Kiforenko, Levchenko).

TRET'YAKOV, A.K., kand.tekhn.nauk; FILONIDOV, A.M., inzh.

Use of ultrasonic waves in studying the quality of concrete in the  
bridge crossing beams of the Kremenchug Hydroelectric Power Station.  
Energ. stroi. no.16;22-26 '60. (MIRA 16:12)

1. Moskovskiy inzhenerno-stroitel'nyy institut im. Kuybysheva.

TRET'YAKOV, A.K., kand.tekhn.nauk; FILONIDOV, A.M., inzh.

Ultrasonic testing of centrifuged shell columns. Transp. stroi. 11  
no.2:28-31 F '61. (MIRA 14:2)

(Ultrasonic testing) (Piers) (Columns, Concrete)

FILONIDOV, A.M., inzh.; TRET'YAKOV, A.K., kand.tekhn.nauk

Ultrasonic strength control of concrete in bridge beams.

Transp. stroi. 11 no.8:47-48 Ag '61. (MIRA 14:9)

(Ultrasonic waves—Industrial applications)  
(Beams and girders)

TRET'YAKOV, A.K., kand.tekhn.nauk; FILONIDOV, A.M., inzh.

Advantages of the application of ultrasonic waves in testing concrete for strength. Energ.stroi. no.25:51-54 '61. (MIRA 15:4)

1. Moskovskiy inzhenerno-stroitel'nyy institut im. V.V.Kuybysheva.  
(Concrete construction) (Ultrasonic testing)  
(Kremenchug Hydroelectric Power Station--Concrete construction)

TRET'YAKOV, A.K., kand.tekhn.nauk; FILONIDOV, A.M., inzh.

Study of solid concrete with ultrasonic waves. Energ. stroi.  
no.27:61-66 '62. (MIRA 15:9)

1. Moskovskiy ordena Trudovogo Krasnogo Znameni inzhenerno-  
stroitel'nyy institut imeni Kuybysheva.  
(Ultrasonic waves--Industrial applications) (Concrete--Testing)

FILONIDOV, A.M., inah:

.. Experience with ultrasonic waves for evaluating the quality  
of concrete in elements and structures. Bet. 1 zhel.-bet.  
8 no.6:259-262 Je '62. (MIRA 15:7)  
(Ultrasonic waves--Industrial applications)  
(Concrete--Testing)

TRET'YAKOV, A.K., kand. tekhn. nauk; FILONIDOV, A.M., inzh.

Using ultrasonic waves to test solid concrete at the Dnepro-  
dzerzhinsk Hydroelectric Power Station. Gidr. stroi. 32 no,3:  
20-21 Mr '62. (MIRA 16:7)

(Ultrasonic waves—Industrial applications)  
(Dneprodzerzhinsk Hydroelectric Power Station—Concrete—Testing)

TRET'YAKOV, A.K., kand. tekhn. nauk; FILONIDOV, A.M., inzh.; EMISTOV, V.S.,  
prof., red.

[Control of concrete by ultrasonic waves in hydraulic-  
engineering construction] Kontrol' betona ul'trazvukom v  
gidrotekhnicheskoy stroitel'stve. Moskva, Energiya, 1964.  
85 p. (MIRA 17:10)

FILONIK, V., inzh.

Attachment for boring brake drums. Avt. transp. 37 no.7:28  
Jl '59- (MIRA 12:10)  
(Lathes attachments) (Automobiles--Brakes)

FILONOV, A.

Scientific and technological revolution and the aggravation of  
contradictions in the present-day capitalist system. Komm.  
Vooruzh.Sil 2 no.1:43-50 Ja '62. (MIRA 14:12)  
(Economics) (Automation)

Filonov, B. O.

1 PM  
2:10 PM

✓ 1908. Effect of phenolic antioxidants on the oxidation of rubber and dipentene by oxygen. N. F. ERMOLENKO, N. N. NEVSKOVA and B. FILONOV. *Uchen. Zapiski (Belorus. Univ.)*, 1954, No. 20, 106-114; Ref. Zhur. Khim., 1956, abn. 52423. The authors investigated the protective effect of phenolic antioxidants with varying degrees of polarity in the molecules, during the oxidation of natural rubber in 0.68% xylene solution and of dipentene at 60°C. The effect is measured by the change in viscosity of the rubber solutions and by the kinetics of the absorption of oxygen by dipentene. The activity of phenolic antioxidants and of  $\alpha$ - and  $\beta$ -naphthols as antioxidants depends upon the position of the hydroxy group; ortho- and para-isomers are more active than the meta-isomers.

4332H6

fm

FILONOV, B.O.; PAVLYUCHENKO, M.M.

Spectrum determination of copper, lithium and rubidium in mineral  
salts. Sbor. nauch. rab. Inst. khim. AN BSSR no.6:92-101 '58.

(MIRA 11:11)

(Copper—Spectra) (Lithium—Spectra) (Rubidium—Spectra)

SOV/81-56-16-56812

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 16, p 115 (USSR)

AUTHORS: Akulovich, V.M., Filonov, B.O., Pavlyuchenko, M.M.

TITLE: Some Possibilities of the Method of Additions in the Spectral Analysis of Mineral Salts

PERIODICAL: Sb. dokl. 1-y Nauchno-tekhn. konferentsii po spektr. analizu. Minsk, AN BSSR, 1956, pp 47-52

ABSTRACT: A method of extrapolation for finding the concentrations of an element on the base of the known dependence  $R = AC^b$  at any values of  $b$  is described. If the sample is divided into 3 fractions and in 2 of them additions  $a$  % and  $c$  % are made, then  $R_x = Ax^b$ ;  $R_{x+a} = A(x+a)^b$  and  $R_{x+c} = A(x+c)^b$ . Converting into logarithms and excluding  $b$ , the following equation is obtained:  $\lg(R_x/R_{x+a}) \cdot \lg(x+a)/(x+c) = \lg(R_{x+a}/R_{x+c})$ . The latter equation has a simple solution under the condition:  $\lg R_x/R_{x+a} = \lg R_{x+a}/R_{x+c}$ , from which follows that  $R_{x+a} = \sqrt{R_x \cdot R_{x+c}}$ . Then  $(x+a)/(x+c) = x/(x+a)$  and the calculated formula has the form:  $x = a^2/(c - 2a)$ . For analysis a graph is plotted in the coordinates  $R$  versus concentration of additions; the geometric mean is calculated between the relative intensities for the sample without additions

Card 1/2

SOV/81-59-16-56812

Some Possibilities of the Method of Additions in the Spectral Analysis of Mineral Salts

and for the sample with a greater addition and, based on the value of  $R$ , the corresponding addition  $a$  is determined from the graph and substituting the values in the calculated formula,  $x$  is found. Extrapolation needs the consideration of the background; in the absence of a background the calculation can be carried out based on the values of  $\Delta S$ . The method has been successfully tested by practice.

G. Kibisov.

Card 2/2

S/715/60/000/001/001/005  
D204/D303

AUTHORS: Pavlyuchenko, M.M. and Filonov, B.O.

TITLE: Influence of third components on the intensity of the spectral lines of Li, Rb, Cu, Ba, Sr, and Mn.

SOURCE: Akademia nauk BSSR, Minsk. Institut obshchey i neorganicheskoy khimii. Sbornik nauchnykh rabot. no. 1, Minsk, 1960, 27 - 34

TEXT: This is an investigation of the effect of chemical composition on the spectral intensities of the above metals, motivated by difficulties experienced in the spectral analyses of trace elements in minerals, particularly those of K. In the first series of experiments NaCl/KCl mixtures were prepared, each chloride ranging 0 to 100 %, and  $10^{-3}$  % Li,  $5 \times 10^{-3}$  % Rb and  $5 \times 10^{-3}$  % Cu were added to each composition. 0.5 % Ba was present in all cases. Intensities of the spectral lines and of the background were measured on the ИСП-51 (ISP-51) spectrograph (ISP-22 for Cu), using the УФ-4

Card 1/2

S/713/60/000/001/001/005  
D204/D303

Influence of third components ...

(UF-4) camera. Experimental details are described in brief. It was found that with incomplete volatilization, the line intensities all showed sharp minima at  $\sim 10\%$  KCl. Background intensities exhibited the same phenomenon. The relative intensities of Li/Ba and Rb/Ba were also strongly dependent on the KCl/NaCl ratio. Compositions based on NaCl/Al<sub>2</sub>O<sub>3</sub>, NaCl/CaSO<sub>4</sub> and NaCl/MgSO<sub>4</sub> (all ranging from 0 to 100 % as for the NaCl/KCl mixes) were also studied, in the same way. Complex relationships between the line intensities (measured with the MFP-2 (MF-2) spectrometer) and the ratios of the 2 basic components were observed. These effects, which complicate the spectral analysis, could be eliminated almost totally by diluting the mixture with an equal amount of powdered carbon, in the case of NaCl/KCl compositions, especially if the samples were completely volatilized. Carbon additions did not, however, have the desired smoothing effect in the case of NaCl/Al<sub>2</sub>O<sub>3</sub> mixtures. The results are discussed in relation to the volatility of the corresponding basic mixtures. The latter problem is now investigated. There are 7 figures and 10 Soviet-bloc references.

Card 2/2

S/048/62/026/007/011/030  
B104/B138

AUTHORS: Pavlyuchenko, M. M., and Filonov, B. O.

TITLE: The use of radioisotopes for studies of the evaporation of salts in an a-c arc

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 7, 1962, 878-881

TEXT: The dependence of Li, Rb, Ba, and Cd line intensities on NaCl and KCl content was investigated on synthetic potassium salts containing 0.001-0.01% Li and Rb chlorides and 0.1-1% Ba and Cd chlorides. Current in the a-c arc was 8 a. If only NaCl or only KCl was present, maximum line intensity occurred during the first period of arc burning. If the two salts were present as a mixture, it was nearer the end. For all the elements examined the variation in line intensity during evaporation is similarly dependent on the ratio of the two salts. Using the radioisotope  $Cd^{115}$  in the  $CdCl_2$  compound the radioactive intensity of the samples was determined before evaporation, and that of their residue after

Card 1/2

The use of radioisotopes for studies ...

S/048/62/026/007/011/030  
B104/B138

it. From this the amount of  $\text{CdCl}_2$  evaporated was calculated (Fig. 1). Variations in line intensity are clearly connected with the evaporation process. The decrease in Cd line intensity is because Cd chloride evaporation from NaCl - KCl mixtures is slower than from the single components. The rate of evaporation is directly dependent on changes of vapor pressure above the salt melt due to variation in the evaporation temperature from the lower electrode. There are 3 figures and 1 table.

Fig. 1. Curve (1): Blackening of Cd 3403.65 Å lines as a function of the NaCl - KCl ratio. Curve (2): Amount of evaporated Cd (in mg) as a function of the NaCl - KCl ratio.

Card 2/02

ALEKSANDROV, P.A., doktor.tekhn.nauk; BESEDIN, P.T., kand.tekhn.nauk;  
FILONOV, I.G.; SOROKIN, A.A.; KARPUNIN, A.M.; CHEPELEV, P.P.

Tempering rail heads along the total length. Put' i put.khoz. 4  
no.8:15-16 Ag '60. (MIRA 13:7)

1. Ukrainskiy institut metallov (for Aleksandrov, Besedin).
2. Glavnyy inzhener Metallurgicheskogo zavoda im. Dzerzhinskogo (for Filonov).
3. Nachal'nik tekhnicheskogo otdela Metallurgicheskogo zavoda im. Dzerzhinskogo (for Sorokin).
4. Nachal'nik metallurgicheskogo zavoda im. Dzerzhinskogo (for Karpunin).
5. Nachal'nik rel'sobaloch'nogo tsekha Metallurgicheskogo zavoda im. Dzerzhinskogo (for Chepelev).

(Railroads--Rails)  
(Tempering)